

**REMARKS**

The Final Office Action mailed November 18, 2003, has been received and reviewed. Claims 1-48 are currently pending in the application. Claims 18, 23, 26, and 30 have been withdrawn from consideration as being drawn to a non-elected invention, but the claims will be rejoined if they are ultimately dependent on an allowable generic claim. Claims 1-17, 19-22, 24, 25, 27-29, and 31-48 stand rejected. Applicants propose to amend claims 1, 3, 7-9, 15, 17, 24, 25, 27, 41, and 45, cancel claims 4 and 20, and respectfully request reconsideration of the application as proposed to be amended herein.

**35 U.S.C. § 103(a) Obviousness Rejections**

Obviousness Rejection Based on U.S. Patent No. 5,728,969 to Otani et al., in View of U.S. Patent No. 5,997,668 to Aubert et al., U.S. Patent No. 5,552,000 to Shepherd, Jr., and French Patent No. FR 465,082

Claims 1-17, 19-22, 24, 25, 27-29, and 31-48 stand rejected under 35 U.S.C. § 103(a) (“Section 103”) as being unpatentable over U.S. Patent No. 5,728,969 to Otani et al. (“Otani”), in view of U.S. Patent No. 5,997,668 to Aubert *et al.* (“Aubert”), U.S. Patent No. 5,552,000 to Shepherd, Jr. (“Shepherd”) and French Patent No. 465,082 to Tarnowski (“Tarnowski”). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103 rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The obviousness rejections of claims 1-3, 5-17, 19, 21, 22, 24, 25, 27-29, and 31-48 is improper because the cited references do not teach or suggest all the claim limitations and do not provide a motivation to combine to produce the claimed invention. Claims 4 and 20 have been canceled, rendering moot the obviousness rejection as to these claims.

Otani discloses a granular explosive that includes from 3-50% by weight of an aromatic dinitro compound and from 50-97% by weight of porous prill ammonium nitrate. The dinitro compound is adsorbed into the ammonium nitrate. The granular explosive is formed by mixing the porous prill ammonium nitrate with the aromatic dinitro compound.

Aubert discloses a method of casting 1,3,3-trinitroazetidine (“TNAZ”) that includes adding a nitro-substituted aromatic amine to a melt including TNAZ. The nitro-substituted aromatic amine is a mono-, di-, or tri-nitro or -amino compound. The TNAZ is present in an amount ranging from 75-95% and the nitro-substituted aromatic amine is present in an amount ranging from 5-25% by weight.

Shepherd discloses an explosive composition that includes a non-aqueous emulsion of a nitrosolution of an organic self-explosive in a surfactant-in-fuel dispersion. The explosive composition is formed by dissolving the organic self-explosive in a nitrosolvent to form a supersaturated nitrosolution. The organic self-explosive is present in the explosive composition from above 50-97% by weight and the nitrosolvent is present from 5-15%. The explosive composition includes a nitramine and, optionally, a nitroaromatic compound. Shepherd does not disclose that an oxidizer or a reactive metallic fuel is used in its explosive composition.

Tarnowski discloses an explosive powder that includes metallic aluminum, an aromatic nitrohydrocarbon, and ammonium perchlorate. The explosive powders include 12-15% trinitrobenzene, 40-75% ammonium perchlorate, and 30% potassium nitrate.

The Examiner states that Otani teaches “the basic invention of melt cast explosives with dinitro aromatics, aluminum metal fuel, etc.” Office Action of November 18, 2003, p. 2. The Examiner then relies on Aubert, Shepherd, and Tarnowski as teaching that “variation of the various notoriously well known additives, amounts and so forth would have been obvious. *Id.* However, Otani discloses that its granular explosive is produced by adsorbing the aromatic

dinitro compound into the ammonium nitrate and, as such, does not disclose a melt-pour explosive. Since Otani does not disclose a melt-pour explosive, it necessarily does not teach or suggest that “the melt-pourable explosive composition is pourable at a temperature in a range of 80°C to 115°C,” as recited in claim 1 as proposed to be amended herein.

The cited references also do not teach or suggest that the explosive composition includes “30 weight percent to 70 weight percent of one or more organic binders comprising at least one member selected from the group consisting of a mononitro-substituted phenyl alkyl ether and a dinitro-substituted phenyl alkyl ether,” as recited in claim 1 as proposed to be amended herein. None of the cited references teach or suggest that the organic binder is selected from the group consisting of a mononitro-substituted phenyl alkyl ether and a dinitro-substituted phenyl alkyl ether because the cited references do not teach or suggest that the organic binder is an ether compound, such as a phenyl alkyl ether compound. In addition, the cited references do not teach or suggest that the organic binder is present at the recited percentage range.

The cited references also do not provide a motivation to combine to produce the claimed invention. To provide a motivation or suggestion to combine, the prior art or the knowledge of a person of ordinary skill in the art must “suggest the desirability of the combination” or provide “an objective reason to combine the teachings of the references.” M.P.E.P. § 2143.01. The Examiner states that “[i]t is well settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art.” *Id.* However, as discussed above, the cited references do not teach or suggest all the limitations of the claimed invention. Therefore, the claimed invention does not merely optimize a result effective variable as asserted by the Examiner. As such, this statement by the Examiner is conclusory and is not an objective reason that supports combining the cited references to produce the claimed invention.

Otani discloses that its granular explosive is formed by adsorbing the aromatic dinitro compound into the ammonium nitrate and, therefore, Otani does not disclose a melt-pour explosive. Furthermore, nothing in Otani suggests the desirability of formulating its granular

explosive to be a melt-pour explosive. As such, the Examiner's stated motivation to combine Otani with Aubert, Shepherd, and Tarnowski to produce the claimed invention is improper and can only be based on the impermissible use of hindsight.

In addition, one of ordinary skill in the art would not be motivated to combine Aubert, Shepherd, and Tarnowski with Otani because many of the cited references do not teach or suggest forming a melt-pour explosive. Out of the cited references, only Aubert discloses a melt-pour explosive. Shepherd, Tarnowski, and Otani do not suggest preparing their respective explosive compositions by melt-pour processes. Therefore, one of ordinary skill in the art would not be motivated to combine these references with Aubert to produce the claimed invention. While Aubert discloses a melt-pour explosive, the melt-pour explosive includes from 5-25% by weight of the nitro-substituted aromatic amine and there is no motivation or suggestion to adjust the amounts of this component. Therefore, nothing in Aubert provides any motivation to form a melt-cast explosive that includes from 30 weight percent to 70 weight percent of the organic binder. Furthermore, nothing in Aubert provides a motivation for using a similar formulation in a granular explosive, such as the granular explosive in Otani.

The cited references also do not provide any motivation for using mononitro-substituted or dinitro-substituted phenyl alkyl ethers in the explosive composition. As such, even if the cited references were combined, the claimed invention would not be produced because the limitation of "30 weight percent to 70 weight percent of one or more organic binders comprising at least one member selected from the group consisting of a mononitro-substituted phenyl alkyl ether and a dinitro-substituted phenyl alkyl ether," would not be taught or suggested, as previously discussed.

Since the cited references do not teach or suggest all the limitations of claim 1, as proposed to be amended herein, and do not provide a motivation to combine, Applicants respectfully submit that the obviousness rejection is improper and should be withdrawn.

Claims 2, 3, 5-14, 43, and 46 are allowable, *inter alia*, as depending from an allowable base claim. Claims 5 and 6 are further allowable because the cited references do not teach or suggest that the organic binder is selected from the group consisting of 2,4-dinitroanisole,

2,4-dinitrophenetole, and 4-methoxy-2-nitrophenol. Claim 43 is further allowable because the cited references do not teach or suggest that the inorganic oxidizers have a single modal particle size distribution in a range of 5 to 50 microns.

The cited references also do not teach or suggest all the limitations of independent claims 15 and 41 for substantially the same reasons discussed above for claim 1. Specifically, the cited references do not teach the limitation of “30 weight percent to 70 weight percent of one or more organic binders comprising at least one member selected from the group consisting of a mononitro-substituted phenyl alkyl ether and a dinitro-substituted phenyl alkyl ether,” as recited in claims 15 and 41 as proposed to be amended herein. The cited references also do not provide a motivation to combine to produce the inventions of claims 15 and 40 for substantially the same reasons discussed above for claim 1.

Since the cited references do not teach or suggest all the limitations of claim 15 and do not provide a motivation to combine, Applicants respectfully submit that the obviousness rejection is improper and should be withdrawn.

Claims 16, 17, 19, 21, 22, 24, 25, 27-29, 31-40, 44, and 47 are allowable, *inter alia*, as depending from an allowable base claim. Claims 21 and 22 are further allowable because the cited references do not teach or suggest that the organic binder is selected from the group consisting of 2,4-dinitroanisole, 2,4-dinitrophenetole, and 4-methoxy-2-nitrophenol. Claims 31, 32, and 44 are further allowable because the cited references do not teach or suggest that inorganic oxidizers have an average particle size from 3 to 60 microns. Claim 44 is further allowable because the cited references do not teach or suggest that the inorganic oxidizers have a single modal particle size distribution in a range of 5 to 50 microns.

Since the cited references do not teach or suggest all the limitations of claim 41 and do not provide a motivation to combine, Applicants respectfully submit that the obviousness rejection is improper and should be withdrawn.

Claims 42, 45, and 48 are allowable, *inter alia*, as depending from an allowable base claim. Claim 45 is further allowable because the cited references do not teach or suggest that inorganic oxidizers have a single modal particle size distribution in a range of 5 to 50 microns.

**Double Patenting Rejection Based on U.S. Patent Application Serial No. 09/893,337 to Doll et al.**

Claims 1-17, 19-22, 24, 25, 27-29, and 31-48 stand *provisionally* rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the respective claims of copending U.S. Patent Application Serial No. 09/893,337 to Doll *et al.* In order to avoid further expenses and time delay, Applicants elect to expedite the prosecution of the present application by filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 CFR § 1.321 (b) and (c). Applicants' filing of the terminal disclaimer should not be construed as acquiescence of the Examiner's double patenting or obviousness-type double patenting rejections. Attached is the terminal disclaimer and accompanying fee.

**Double Patenting Rejection Based on U.S. Patent No. 6,648,998 to Doll et al.**

Claims 1-17, 19-22, 24, 25, 27-29, and 31-48 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the respective claims of U.S. Patent No. 6,648,998 to Doll *et al.* In order to avoid further expenses and time delay, Applicants elect to expedite the prosecution of the present application by filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 CFR § 1.321 (b) and (c). Applicants' filing of the terminal disclaimer should not be construed as acquiescence of the Examiner's double patenting or obviousness-type double patenting rejections. Attached is the terminal disclaimer and accompanying fee.

### **ENTRY OF AMENDMENTS**

The proposed amendments to claims 1, 3, 7-9, 15, 17, 24, 25, 27, 41, and 45 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

### **CONCLUSION**

Claims 1-3, 5-17, 19, 21, 22, 24, 25, 27-29, and 31-48 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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